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# 1977 Insect Pest Management Guide

## LIVESTOCK and LIVESTOCK BARNs

*You must be certified as a pesticide applicator by October 21, 1977, to use "restricted use" pesticides. See your county extension adviser for information.*

Livestock producers must manage insect pests to attain maximum production. Flies, lice, mites, ticks, and grubs irritate animals and some suck their blood. This reduces meat, milk, and egg production. On occasion, individual animals have been killed by attacks of large numbers of pests like horse flies, lice, and mites. Several of these pests transmit diseases from animal to animal. Losses from pests each year cost Illinois farmers millions of dollars. A livestock producer does not need to share his profits with insects — they can be managed effectively.

Insect pest management programs, which include the wise selection of cultural, mechanical, biological, and chemical methods, are suggested for the major insect pests of livestock and livestock barns. Insecticides are still the most efficient means of managing most insect problems. Only the safest, most effective insecticides are suggested for each specific insect on each type of livestock. Other insecticides that may have label approval for use on livestock are not included because they are less effective or more toxic or present potential residue problems. Blank spaces in the table of limitations mean we do not suggest the insecticide for that specific purpose in Illinois.

In using insecticides read the label and follow instructions. Do not exceed the rates suggested; observe the interval between application and slaughter and apply only to those animals for which use has been approved. Keep a record of the insecticide used, trade name, percentage of active ingredients, dilution, rate of application, and dates of application. If you are ever questioned, you have the records.

Most of the insecticides are suggested for use as emulsion concentrates since these are the easiest formulations to handle. Wettable powders can be substituted if the finished spray is well agitated.

Chemical names in these tables may be unfamiliar to you. These names are the common coined chemical names and are not capitalized. Trade names are capitalized. In the table of limitations (page 4) common names are listed first. If the trade name is more commonly used, it is listed in parentheses with the common name. In the tables of suggested insecticides on pages 2 and 3, only the common name is used if there is one. In case of question, refer to the table of limitations.

These suggestions are printed annually. Always use the current year's issue. Labels may be cancelled and a product removed from the market at any time. New labels may be granted. We attempted to anticipate any further label changes, but there may be an occasional change. Check with your county extension adviser if you are not sure about the insecticide you plan to use. We will make announcements of label changes through the news media to keep you up to date.

Insecticides will be classified for *general use* or *restricted use* by the U.S. Environmental Protection Agency by October 21, 1977. After that time, a person wishing to use an insecticide classified for restricted use must be certified as a private or commercial pesticide applicator by the State of Illinois. Contact your county extension adviser in agriculture for details on this program.

*The Illinois Department of Public Health has announced it is illegal for dairymen to apply or store chlorinated-hydrocarbon insecticides — aldrin, chlordane, dieldrin, endrin, lindane, or heptachlor — on their farms, except for use in farm residences. Previously use of DDT was prohibited except by permit from the Illinois Department of Agriculture or Public Health.*

Suggestions for use of insecticides are based on available data. Rainfall, temperature, and many other factors affect efficiency of insecticides. Report the details of control failures to us.

These suggestions were prepared by entomologists of the University of Illinois College of Agriculture and the Illinois Natural History Survey.

Leaflets describing the life history, biology, and habits of some of the insects mentioned can be obtained from offices of county extension advisers or by writing to Entomology Extension, 169 Natural Resources Building, Urbana, Illinois 61801. These are indicated by an NHE number in the tables.

Obtain the following circulars on insect control from the Office of Agricultural Publications, 123 Mumford Hall, Urbana, Illinois 61801.

Circular 899, Insect Pest Management Guide — Field Crops

Circular 900, Insect Pest Management Guide — Home, Yard, and Garden

Circular 925, Insect Pests of Cattle



**DAIRY CATTLE, BEEF CATTLE, SWINE, AND SHEEP**  
(Refer to table of limitations on back page before using insecticides)

	Insect	Insecticide	Amount per 100 gal. water or as directed	How to apply
Dairy Cattle	Lice and mange (NHE-18)	crotoxyphos 14.4% E.C.	6 pt.	1-2 gal. per animal. Spray entire animal to saturation. Make 2 treatments 14 days apart.
	Face flies <sup>1</sup> (NHE-106)	crotoxyphos 2.0% O. <sup>2</sup>	Ready to use	1-2 oz. per animal; 2-4 times per week. <sup>3</sup>
	Horn flies <sup>1</sup> (NHE-59)	Ciovap {crotoxyphos 1.0% + dichlorvos 0.25% O. <sup>2</sup>	Ready to use	
	Stable flies <sup>4</sup> (NHE-61)	Ciovap {crotoxyphos 10.0% + dichlorvos 2.5% E.C.	3 pt. per 5 gal. water	1 pt. per animal per week. <sup>3</sup>
	Mosquitoes <sup>1</sup>			
	Horn flies <sup>1</sup>	dichlorvos 1.0% O. <sup>2</sup>	Ready to use	1-2 oz. per animal daily. <sup>3</sup>
	Stable flies <sup>4</sup>	pyrethrin 0.1% + synergist O. <sup>2</sup>	Ready to use	
	Horse and deer flies <sup>5</sup> (NHE-60)	pyrethrin 0.5% + synergist O. <sup>2</sup> pyrethrin 1% + synergist E.C.	Ready to use 10 gal.	2 oz. per animal 3 times per week. <sup>3</sup> 1-2 qt. per animal every 3 days. <sup>3</sup>
	Horn flies	crotoxyphos 3.0% D. or 1.0% O. coumaphos 5.0% D. or 1.0% O. stirofos 3.0% D. or 1.0% O. dichlorvos 0.25% O. ronnel 1.0% O.	In dust bags or face and back oilers	Use only in exits of milk parlors, barns, or lanes. Apply daily. Only partially controls face and stable flies.
Beef Cattle	Lice and mange (NHE-18)	crotoxyphos 14.4% E.C. malathion 50-57% E.C.	6 pt. 3 qt.	1-2 gal. per animal. Spray animal to saturation. Make 2 applications 14 days apart.
	Lice	ronnel 24.5% E.C.	1 qt. per gal. water	Apply 1 oz. per 100 lb. body weight. Maximum of 8 oz. per animal. Pour on topline from shoulders to hips.
	Face flies <sup>1</sup> Horn flies <sup>1</sup>	Ciovap {crotoxyphos 10.0% + dichlorvos 2.5% E.C.	3 pt. per 5 gal. water	1-2 oz. per animal; 2-4 times per week from a mist blower. <sup>3</sup> 1 pt. per adult animal per week. <sup>3</sup>
	Stable flies <sup>4</sup> Mosquitoes <sup>1</sup>	crotoxyphos 2.0% O.	Ready to use	1-2 oz. per animal; 2-4 times per week from automatic sprayer. <sup>3</sup>
		Ciovap {crotoxyphos 1.0% + dichlorvos 0.25% O.	Ready to use	
	Horn flies <sup>1</sup>	Dust bags and oilers: Various insecticides are approved for use in face oilers, back oilers, and dust bags. Force treat if possible, but always place in location for greatest use. Only partially controls stable and face flies. Keep device well charged and in good working order.		
	Horse and deer flies <sup>1</sup>	Use as directed for dairy cattle above.		
	Grubs	Systemic insecticides like coumaphos, crufomate, fenthion, phosmet, and trichlorfon, as sprays provide excellent control of grubs and good control of lice. Use only on <i>native beef cattle</i> in herds having a history of grub problems. Treat only those animals between 4 months and 2½ years of age. Apply during August or September in the southern half of the state and in September or October in the northern half of the state. Animals in confinement are not attacked by ox warble flies.		
Swine	Mange and lice	crotoxyphos 14.4% E.C. malathion 50-57% E.C.	1 gal. + 7 pt. 3 qt.	2-4 qt. per animal. Spray animal to saturation. Make 2 applications 14 days apart.
	Lice	fenthion 3% O.	Ready to use	Apply ½ oz. per 100 lb. body weight. Pour on topline from neck to rump.
Sheep	Keds, lice, and scab (NHE-53)	toxaphene 60% E.C.	3 qt. <sup>5</sup>	Spray animal to saturation or use in dipping vat for scab. <sup>6</sup>
	Keds and lice	diazinon 50% W.P.	½ oz. per 3 gal. water	Apply 1 qt. per animal from sprinkling can over back, head, and neck. <sup>7</sup>

Note: E.C. = emulsion concentrate, O. = oil solution, W.P. = wettable powder, D. = dust.

<sup>1</sup> Place cattle in barns or sheds to avoid attack by face flies, horn flies, horse flies, deer flies, and mosquitoes.

<sup>2</sup> The same dosage of a water-base spray may be used.

<sup>3</sup> Spray head, back, sides, belly, and legs carefully. Start treatments in June.

<sup>4</sup> Remove decaying straw, hay, manure, and feed from barns and lots, and spread to dry each week or cover manure pile with black plastic so stable fly breeding will be reduced.

<sup>5</sup> Add 2 pounds of detergent per 100 gallons of spray for better wetting effects.

<sup>6</sup> Official scab eradication treatment used by the State Department of Agriculture. Involves 2 dippings 10-14 days apart. Isolate and treat incoming animals before introducing them into the flock.

<sup>7</sup> Stir the diazinon suspension frequently.

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# GOATS, HORSES, CHICKENS, LIVESTOCK BARNs, AND SHEDS

(Refer to table of limitations on back page before using insecticides)

	Insect	Insecticide	Amount per 100 gal. water or as directed	How to apply
<b>Goats</b> <i>Pastured goats only</i>	Face flies <sup>1</sup> Stable flies <sup>2</sup> Mosquitoes <sup>1</sup>	Ciovap {crotoxyphos 10.0% + dichlorvos 2.5% E.C.	3 pt. per 5 gal. water	Apply 1 pt. per animal per week.
	Horse and deer flies <sup>1</sup>			Use pyrethrin as directed for dairy cattle.
	Lice	Ciovap {crotoxyphos 10.0% + dichlorvos 2.5% E.C.	1 gal. + 7 pt.	Apply 2-4 qt. per animal. Repeat in 14 days.
<b>Horses</b> <i>Pastured horses only</i>	Face flies <sup>1</sup> Stable flies <sup>2</sup> Mosquitoes <sup>1</sup>	stirofos 1.0% + .09% synergized pyrethrin + 1.3% repellent O.	Ready to use	Apply as a wipe on or spray over entire animal. <sup>3</sup>
	Horse and deer flies <sup>1</sup>		Use water-base spray	of pyrethrin as directed for dairy cattle.
	Black flies <sup>1</sup>	petroleum jelly	Ready to use	Apply a thin coating on inside of ears as needed. Use stirofos as suggested above for flies.
	Lice	malathion 4.0-5.0% D.	4-3 tbl. per animal	Apply on back and neck of animals. Repeat in 14 days.
<b>Chickens</b>	Northern fowl mites, common red mites, bedbugs, and lice (NHE-54)	carbaryl 80% W.P.	4 oz. per 5 gal. water	Spray birds using 1 gal. per 100 birds for fowl mites and lice. Spray roosts, walls, and around nests for red mites and bedbugs. Dust of 5% carbaryl, 0.5% coumaphos, 4% malathion, or 3% stirofos may be used on litter for control of northern fowl mites and lice. Keep wild birds from entering or nesting in poultry houses.
		stirofos 50% W.P.	6.5 oz. per 5 gal. water	
		coumaphos 25% W.P.	3 oz. per 5 gal. water <sup>4</sup>	
		malathion 5057-% E.C.	5 oz. per 5 gal. water <sup>4</sup>	
		stirofos 24% E.C. <sup>7</sup>	13 oz. per 5 gal. water	
		Ravap {stirofos 23% + dichlorvos 6% E.C.	13 oz. per 5 gal. water	
<b>Residual Sprays for Livestock Barns and Sheds<sup>2</sup></b>	House flies (NHE-16, 88) Stable flies Other flies, mosquitoes, and gnats	fenthion 45% E.C.	3 gal.	Start treatments in June and maintain good sanitation. Apply 2 gal. per 1,000 sq. ft. or to runoff to ceilings, walls, and support posts, and outside around doors and windows. Lasts about 4-6 weeks. <sup>5</sup>
		diazinon 50% W.P.	16 lb.	Lasts about 2-3 weeks. <sup>5</sup> Apply as for fenthion. Do not use in dairy or poultry barns.
		dimethoate 23% E.C.	4 gal.	Lasts about 3-4 weeks. <sup>5</sup> Apply as for fenthion.
		stirofos 24% E.C. <sup>5</sup>	4 gal.	Lasts about 2-4 weeks. <sup>5</sup> Apply as for fenthion.
		Ravap {stirofos 23% E.C. dichlorvos 6% E.C.	4 gal.	
		ronnel 24% E.C.	4 gal.	Lasts about 1-2 weeks. <sup>5</sup> Apply as for fenthion.
<b>Space Sprays for Feed Lots and Sheds<sup>2</sup></b>	House flies Stable flies Other flies, mosquitoes, and gnats	dichlorvos 23% E.C.	2 gal.	Apply at 5 gal. per acre with mist blower over the top of animals and pens every 3 to 7 days.
		naled 37% E.C. <sup>7</sup>	1 gal.	Apply as for dichlorvos.
		pyrethrin E.C.	Dilute to 0.1% by weight with water	Apply as for dichlorvos.
<b>Baits as Supplements for Livestock Barn and Shed Sprays<sup>2</sup></b>	House flies	dichlorvos 23% E.C.	4 oz. per 1 gal. corn sirup and ½ gal. warm water	Apply to favorite fly-roosting areas from tank sprayer as needed to supplement residual spray treatment.
		naled 37% E.C.	2 oz. per 1 gal. corn sirup and ½ gal. warm water	Apply as for dichlorvos.

Note: E.C. = emulsion concentrate, O. = oil solution, W.P. = wettable powder, D. = dust.

<sup>1</sup> Place horses or goats in barns or sheds to avoid attack by face flies, black flies, horse flies, deer flies, and mosquitoes.

<sup>2</sup> Good sanitation is the basic step in barn fly control (house and stable flies). Remove manure, decaying straw, hay and feed, and spread to dry each week or cover manure pile with black plastic. Leave a 4-6 in. residue of manure in the pits or pens if the interval between cleanups is more than 1 week.

<sup>3</sup> Spraying may upset horses. Avoid getting spray into the animal's eyes. Use rubber gloves when wiping on insecticides.

<sup>4</sup> Double the amount of insecticide-to-water ratio for spraying roosts, walls, and around nests.

<sup>5</sup> Lasting effects are shortened during periods of hot, dry weather.

<sup>6</sup> A wettable powder formulation can be substituted if the finished spray is well agitated.

<sup>7</sup> Temporary stinging of eyes may occur from mist but this is not hazardous. Rinse equipment thoroughly after use to avoid corrosion.



**LIMITATIONS FOR SUGGESTED INSECTICIDES APPLIED TO LIVESTOCK OR IN LIVESTOCK BARNs**  
**(Blank spaces in the table denote that the material is not suggested for that specific use in Illinois)**

	Dairy		Beef		Swine		Sheep		Goats		Horses		Chickens	
	Animals	Barns	Animals	Barns	Animals	Barns	Animals	Barns	Animals	Barns	Animals	Barns	Birds	Barns
carbaryl (Sevin).....	...	...	...	...	...	...	...	...	...	...	...	...	A,B	A,B
Ciovap.....	C,D,E,F	...	C,D,E,F	...	...	...	...	...	C,D,G	...	...	...	...	...
coumaphos (Coral)....	C, D	...	C,D,E	...	...	...	...	...	...	...	...	...	B	B
crotoxyphos (Ciodrin)..	C,D,E,F	...	C,D,E,F	...	C,D	...	...	...	...	...	...	...	...	...
cruformate (Ruelene)...	...	...	C,D,E,H	...	...	...	...	...	...	...	...	...	...	...
diazinon.....	...	...	...	D,I	...	D,I	C,D,J	D,I	...	...	...	D,I	...	...
dichlorvos (DDVP) (Vapona).....	C,D	K,L	C,D	K,L	...	K,L	...	K,L	C,D	K,L	C,D	K,L	...	K
dimethoate (Cygon)....	...	D,I	...	D,I	...	D,I	...	D,I	...	D,I	...	D,I	...	D,I
fenthion (Baytex).....	...	D,I	C,D,E,M	D,I	N,O	D,I	...	D,I	...	D,I	...	D,I	...	B
malathion.....	...	...	C,D	...	C,D	...	...	...	...	...	C,D	...	B	B
naled (Dibrom).....	...	C,K,L	...	K,L	...	K,L	...	K,L	...	K,L	...	K,L	...	K
phosmet (Prolate).....	...	...	C,D,E,P	...	...	...	...	...	...	...	...	...	...	...
pyrethrin.....	C	L	C	L	...	L	...	L	C	L	C	L	...	...
Ravap.....	...	D,I	...	D,I	...	D,I	...	D,I	...	D,I	...	D,I	B,Q	B
ronnel (Korlan).....	C,D	D,I	C,D	D,I	...	D,I	...	D,I	...	D,I	...	D,I	...	B
stirofos (Rabon).....	C,D	D,I	...	D,I	...	D,I	...	D,I	...	D,I	C,D	D,I	B,Q	B
toxaphene.....	...	...	...	...	...	...	C,R	...	...	...	...	...	...	...
trichlorfon (Neguvon)..	...	...	C,D,E,N	...	...	...	...	...	...	...	...	...	...	...

- A. Do not apply within 7 days of slaughter and do not treat nesting material. Do not repeat within 4 weeks.  
B. Gather eggs before treatment and do not contaminate feed and water.  
C. Do not contaminate feed, water, milk, or milking equipment.  
D. Do not apply in conjunction with the feeding of phenothiazine or organophosphate insecticides.  
E. Do not treat: animals less than 6 months old; sick or stressed animals within 10 days of shipping animals; or in a confined, nonventilated area.  
F. Do not treat Brahman cattle.  
G. Do not repeat more often than every 7 days.  
H. Do not apply within 7 days of slaughter. Do not repeat applications within 21 days.  
I. When used as a spray, remove animals before treating barn. Do not contaminate feed, water, eggs, milk, or milking equipment. Do not use in milk storage rooms. Do not apply to animals.  
J. Do not apply within 14 days of slaughter. Do not treat lambs less than 2 weeks old.  
K. As a bait. Do not apply within reach of animals or in milk rooms. Do not contaminate feed, water, eggs, milk, or equipment.  
L. As a space spray in feed lots, corrals, or pens; may be applied with animals present, but avoid direct application to exposed feed and water. Do not apply in conjunction with the feeding of phenothiazine or the feeding or use as animal or shelter treatments of organophosphate or carbamate insecticides.  
M. Do not apply within 45 days of slaughter.  
N. Do not apply within 14 days of slaughter.  
O. Do not use in conjunction with organophosphate or carbamate insecticides.  
P. Do not apply within 21 days of slaughter. Do not repeat treatment within 7 days.  
Q. Do not repeat more often than every 14 days. If used on walls for fly control, do not apply to birds.  
R. Do not apply within 28 days of slaughter.

### FOR YOUR PROTECTION

Here are a few easy rules that if followed will prevent most insecticide accidents:

1. Wear rubber gloves when handling insecticide concentrates.
2. Do not smoke while handling or using insecticides.
3. Keep your face turned to one side when opening insecticide containers.
4. Leave unused insecticides in their original containers with the labels on them.
5. Store insecticides out of reach of children, irresponsible persons, or animals; store preferably in a locked cabinet or room, away from food, feed, or water.
6. Wash out and bury or burn empty insecticide containers.
7. Do not put the water-supply hose directly into the spray tank.

8. Do not blow out clogged nozzles or spray lines with your mouth.

9. Wash with soap and water exposed parts of body and clothes contaminated with insecticide.

10. Do not leave puddles of spray on impervious surfaces.

11. Do not apply to or allow runoff into fish-bearing or other water supplies. Do not allow treated animals in fish-bearing waters or other water supplies until the spray has dried.

12. Do not apply insecticides, except in an emergency, to areas with abundant wildlife or to blossoming crops visited by bees. Avoid drift onto blossoming crops and onto beehives.

13. Do not apply insecticides near dug wells or cisterns.

14. Do not spray when weather conditions favor drift.

15. Follow all directions and precautions listed on the label.

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